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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,744	09/24/2001	Tetsuya Kaneko	35.C15833	5038

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EXAMINER

RAMSEY, KENNETH J

ART UNIT	1	PAPER NUMBER
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2879

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/960,744

Applicant(s)

KANEKO ET AL.

Examiner

Kenneth J. Rams y

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-17 and 20-28 is/are rejected.
- 7) ☒ Claim(s) 10, 11, 18, 19, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 6) ☐ Other: \_\_\_\_

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### DETAILED ACTION

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. There is no antecedent for the phrase "the electron emitting device subjected to the activation step" in claim 20, lines 11-12, or for "the electron-emitting device having carbon and/or a carbon compound ..." in claim 21, lines 10-13. These further limitations of the electron-emitting device should be positively recited without the indirect format.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, ,3-7, 9, 20, 21, 23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki et al JP 11-312467 (November 1999) in view of Nakanishi et al, JP 11-135018 (May 1999). Iwasaki et al discloses an aging step of stabilized the driving current of an image display apparatus. See the corresponding U.S. patent 6,149,480 (which is considered to conform to the disclosure of the JP patent), column 7, lines 30-67, etc. Iwasaki et al fails to disclose the step of seal bonding the display wherein the step of aging is preformed prior to the step of seal bonding. Nakanishi et al discloses the process of conducting an activating and

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stabilizing step while the face plate and emitter plate of a display device are spaced apart from each other so that the atmosphere of the device can be more easily controlled during the process steps. See the corresponding U.S. Patent 6,254,449 (which is considered to conform to the disclosure of the prior JP patent) column 4, lines 40-62. Since, as shown by Iwasaki et al, figure 20, (e.g. see figure 21 of the corresponding U.S. patent 6,149,480) the nature of the atmosphere must be carefully controlled during aging, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to conduct the aging step of Iwasaki et al prior to seal bonding so that the atmosphere in the device can be more easily controlled as taught by Nakanishi et al. As to claims 3-6 and 23, see Iwasaki et al, column 8, lines 60-65. As to claims 7, 9, 20, 21 and 25, see Iwasaki et al, column 6, lines 42-50. As to claims 20, 21 and 25, see Iwasaki et al, column 13, line 47 through column 14 line 9.

Claims 2, 22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki et al in view of Nakanishi et al as applied to claims 1, 20 above, and further in view of Mitome et al, EP 908,916. These claims further differ from Iwasaki et al by specifying that the device is not exposed to the atmosphere between the steps of aging/activation and the sealing step. Mitome, figure 31, page 42, lines 5-13 teaches connecting a plurality of processing chambers with vacuum interlocks through which electron-emitting devices are conveyed without exposure to the atmosphere. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ such an apparatus between the aging/activation chamber and sealing means

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of Iwasaki et al as above modified by Nakanishi et al to avoid contamination of the device subsequent to aging since any contamination would undo the benefit of aging.

Claims 8 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwasaki et al and Nakanishi et al as applied to claims 1 and 20 above, and further in view of Kawade et al. These claims further add the limitation that the aging/activation voltage is greater than the normal operating voltage. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ a greater voltage than the normal operating voltage in the preprocessing steps of Iwasaki et al or Nakanishi et al since this is taught by Kawade et al to speed up the processing.


Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over (1) Iwasaka et al in view of Nakanishi et al alone or with Mitome or Kawade as applied to claims 1, 2 or 8 above, and further in view of Ikeda et al. These claims further add the limitation of selectively adjusting the characteristics of the electron emitting devices, e.g., by applying a voltage greater than the normal driving voltage to the electron emission devices. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to selectively age/activate the electron emissive devices of Iwasaki et al as above modified to obtain uniform emission properties even with non-uniform conditions since Ikeda et al teaches that non-uniformity can be avoided by detecting the emission properties of the devices and selectively applying additional processing based upon the detected emission property

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***Allowable Subject Matter.***

Claims 10, 11, 18, 19 26, 27, 29 and 30 would be allowable if rewritten to overcome any rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claims 10, 18, 26 and 29 are allowable since the prior art does not teach or suggest the invention as claimed including the additional step of getting the device prior to seal bonding. Claims 11, 19, 27 and 30 are allowable since the prior art does not teach or suggest the invention as claimed including the step of electron beam cleaning the emissive devices prior to the application of aging/activation/etc. as claimed.

Any inquiry concerning this communication should be directed to Kenneth J. Ramsey at telephone number 703-308-2324.

  
Kenneth J. Ramsey  
Primary Examiner  
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